Field of the invention

The present invention relates to a procedure and a telecommunication system which enhances utilizing mobile telephone services in non-mobile telecommunication networks.

Background of the invention

There is known a technology of using one and the same personal telephone number recognizable in different telecommunications networks. For example, EP 0738093 A2 (to TELIA AB), which is incorporated herein by reference, describes the technology where one telephone number is associated with a subscriber in various different communications networks. A condition for using this personal number is a central network node located at or being in communication with the mentioned different networks, preferably PSTN, ISDN, GSM or other mobile networks such as NMT (Nordic Mobile Telephony). The central network node does not influence network functions, numbering schemes and terminals in these networks. When a call is directed to a subscriber associated with any of the mentioned telecommunications network or utilizing a cordless access system, the call (independent of which telecommunications network it emanates) is connected to this central network node which converts the received personal number to the specific number corresponding to the communications network at which the subscriber has registered himself/herself. Upon that conversion, the network node connects the call to the current access point which corresponds to the specific number.

Also, there is known a US patent 6,301,474 (to Openwave Technologies Inc.) which is incorporated hereby by reference, describing

a mobility extended telecommunication application. The technology comprises an integrated wireless and wirelined network with central control, which has a programmed interface to translate between the different protocols of the wireless and the wirelined networks to allow for automatic redirection of a new incoming call, that is about to be established, between a telephone device of the wireless network and a telephone device of the wireline network.

The services proposed in the above patent publications are quite advanced. However, every user who intensively uses the phone , often encounters the situation when a conversation starts while using a fixed or cordless phone but, since the user must leave the premises, the conversation has to be stopped and, upon redialing, to be continued from a mobile phone. The users are also familiar with an opposite situation, when a communication session starts at a mobile phone and after a period of time could have been continued at a fixed or cordless phone (e.g. while obtaining a higher quality of service and/or while using more comfortable appliances at the premises), but the cumbersome operation of disconnecting and re-connecting prevents the user from making that switch.

There are also many other situations where a user of a mobile network (who is also a user of a non-mobile network) would be interested of transparently using facilities of the non-mobile network and facilities of the mobile network whenever desired.

Summary of the invention

The objects of the present invention, among which resolving the problems outlined above, will be explained as the description of the invention proceeds.

There is a need of providing a user (a group of users), when conducting a communication session in a combined network comprising a mobile network and a non-mobile access network, with a possibility to freely switch from a mobile communication device to a non-mobile communication device and vice versa, in some cases even during one communication session. The Inventors propose achieving that by appending the non-mobile access network (to which the non-mobile device belongs) to the mobile network in a manner that the access network would simulate a part of the mobile network and its non-mobile device would simulate the mobile device for the mobile network.

There is proposed a method of supporting a mobile communication session in a combined communications network comprising a mobile network and a non-mobile access network; in said mobile network, said mobile communication session is associated with a specific mobile number, the method comprises

associating, in the non-mobile access network, said specific mobile number with a non-mobile device of said non-mobile network,

selectively conducting said mobile communication session either through a mobile device associated with said mobile number in the mobile network, or through a non-mobile device associated with said mobile number in the non-mobile network.

The mobile communication session is a communication session held through a communication path at least partially passing via the mobile communications network.

When we say that the mobile communication session is associated with the mobile number, we mean that, for the mobile network, said mobile number is either the source or the destination of said mobile

communication path. It should be noted, however, that the communication path may comprise more than one other component sections.

To make the access non-mobile network simulate part of the mobile network, the method further comprises providing the non-mobile access network with an access device capable of simulating functions of a base station of the mobile network relative to a controller of said mobile network and with respect to at least said specific mobile number of said mobile network.

Consequently, association of the mobile number with the non-mobile device of said non-mobile network can be performed by registering thereof in the access device.

There are three basic embodiments of the mobile and non-mobile devices, which should specifically be mentioned for better understanding the proposed method.

1. The mobile device and the non-mobile device may be one and the same communication device having one and the same mobile number. It is a case of a mobile device with a DECT functionality. A cordless DECT device comprises a receiver and a base part; the receiver of the DECT serves as a mobile device when remote from its base part, and when the receiver is in proximity with the base part, they together serve as a non-mobile device.

2. The mobile number may be a common number for two separate communications devices: the mobile device and the non-mobile device.

3. The mobile and the non-mobile devices may be two different devices having two respective separate numbers: the mobile number and a non-mobile number.

Various examples of applying the proposed method will be presented later in the summary and in the detailed description.

The most preferred example is transferring a communication session in progress from the non-mobile device to the mobile device, and vice versa.

By an embodiment of the present invention, the method supports re-routing, during a single communication session, from the mobile device (e.g. a cellular telephone and the like) associated with the mobile communications network to the non-mobile device (e.g. a desk telephone, a cordless telephone and the like, a computer, etc.) associated with the non-mobile communications network, or vice versa.

The rerouting is normally preceded by obtaining a suggestion to reroute the communication session.

The proposed selective use of the two communication devices (and particularly, said rerouting) is most useful when the mobile and the non-mobile devices are located in proximity to one another.

Therefore, the method preferably includes a step of determining proximity of the mobile device to the non-mobile device. Actually, in this case the step of determining proximity constitutes said suggestion for rerouting.

The step of obtaining the rerouting suggestion, in particular the step of determining the proximity, can be performed either automatically (in case of the DECT type wireless telephone serving both the mobile device and non-mobile device), or non-automatically – based on a signaling action initiated by the user.

The above-discussed step may comprise various sub-steps (regardless whether there is or there is no geographical proximity between the devices): for example, it usually comprises an initial signaling message

issued by one of said mobile device and non-mobile device to said access device, such a signaling message actually being a suggestion to perform the rerouting. The message may either inform on the automatically detected proximity between the devices, or be just a request of rerouting initiated by the user from one of the devices, by inserting a code.

The suggestion of rerouting is preferably applied from the device presently not engaged with the communication session and results in revealing (i.e., comprises implicitly or explicitly) information on the number of the device to which the rerouting is requested. In one embodiment of the method, it comprises storing, in the access device, information on a group of non-mobile devices and mobile devices that are pair-wise entitled for rerouting communication sessions there-between.

Preferably, the method described above further comprises a step where, upon obtaining the suggestion of rerouting, the user presently engaged in the communication session via one of said devices receives an indication that he/she may switch to the other device. Still preferably, the re-routing step is carried out following a response received from the user to that indication.

In the simplest case, the communication session is a telephone call. However, both the mobile device and the non-mobile communication devices may provide not only voice sessions, but ensure fax transmissions, data communications, multimedia sessions. It means that the mobile communication device can be a personal computer having a cellular connection to internet, a mobile phone with the fax and internet functionality, etc.

The access non-mobile network can be, for example, a fixed PSTN (Plain Service Telephone Network), a wireless LAN (Local Area

Network), etc. The mobile network should be understood as a cellular network.

Preferably, the method comprises connecting the access device via wireline means both to the access non-mobile network and to the fixed controller of the mobile network.

The access device can be in the form of a DSLAM (Digital Service Line Access Multiplexer), a DSLAM in combination with a CPE (Customer Premises Equipment; in these cases the wireline means connecting the access device with the non-mobile communication network will be in the form of DSL or xDSL lines.

Alternatively, the access device can be in the form of OLT (Optical Line Termination), wherein the wireline means between the access device and the non-mobile access network are in the form of one or more optical fibers.

The controller of the mobile network may, for example, be a radio network controller RNC belonging to the mobile (cellular) network.

The method turns the non-mobile network to become a part of the mobile network and allows performing a variety of new communication options in such a combined communications network.

According to a second aspect of the invention, there is proposed an access device of a non-mobile access network for serving in a combined communications network comprising said non-mobile network and a mobile network, the access device is capable of simulating functions of a base station of the mobile network for at least one specified mobile number of said mobile network, by presenting an alternative to conduct a mobile communications session, associated in said mobile network with said specified mobile number, through a non-mobile device of the non-mobile network.

Preferably, the mobile telephone number belonging to said mobile network is registered in said access device in association with a non-mobile communications device belonging to said non-mobile network.

The access device allows said mobile communication session, being initially conducted through one of said non-mobile device or a mobile device associated with said registered mobile number, to be continued by selectively using another of said mobile device or said non-mobile device.

To implement the above capabilities, the access device should be:

connectable (preferably, by wireline means) with said non-mobile access network and with a controller of said mobile network to enable digital communication,

capable of transforming communication protocols from at least one protocol of said mobile network to at least one protocol of said non-mobile network, and vice versa,

provided with a functional unit performing functions similar to that of a base station of said mobile network, including:

registering at the access device at least one mobile telephone number assigned to a mobile device in said mobile network,

monitoring and processing signaling sessions and communications sessions associated with said mobile telephone number.

For example, the access device registers a mobile number which, remaining the mobile number, also serves a number of the non-mobile network (such as a DECT telephone where a receiver serves a mobile device when out of the area of the base part). So, if the receiver is sensed by its base part, the access device will receive a signaling event from the base part, and the signaling event can be understood by the access device as a command to cause rerouting of a next (or even a current) communication session to be held via the non-mobile network and not via the mobile network.

Another example is that the access device holds registration of a particular mobile number entitled to obtain from the access device some services similar to those of a base station. Suppose a user, using a non-mobile device in the access network, is engaged in a communication session with some remote destination via a mobile network. Suppose the user now wishes to reroute the session, to be held by his partner from a mobile device with the registered mobile number. The mobile device may be located far from the access network, but if the non-mobile device issues a signaling event requesting the rerouting to the registered mobile number, the access device will cause the controller of the mobile network to redirect the communication session to the mentioned mobile device. **(OK?)**

A third example: a communication session is held via a mobile device whose number is registered in the access device in association with a particular number of a non-mobile device (say, of the same user). When the user's mobile device is brought close to the non-mobile device, the user may decide to seamlessly switch to the mentioned non-mobile

device; to do that, the user may signal from the non-mobile device to the access device to request rerouting the session. The access device thus understands that the mobile device is in the access network ("senses it indirectly"), and may then cause the controller of the mobile network to reroute the current session via the access device to the non-mobile device.

A fourth example is when the communication session passing via the mobile network is held on a non-mobile device in the access network and the user wishes to switch the session to a mobile device (the number of the mobile device is registered in the access device in relation to the non-mobile device). To do that, the user actually reports on the proximity of the mobile device and requests for rerouting, either by signaling from the non-mobile device to the access device, or from the mobile device to the controller of the mobile network, thus causing the controller to drop the session via the access device and reroute the session to the mobile device via a regular base station of the mobile network.

Other examples of versatile use of the mobile and non-mobile devices in the described combined network could be imagined.

Therefore, the access device preferably allows registering said mobile telephone number with association to at least one non-mobile telephone number assigned in said non-mobile network to a non-mobile device.

Further, the functional unit performing functions similar to that of a base station of said mobile network, preferably enables determining proximity of the mobile device associated with said registered mobile telephone number.

It goes without saying that the access device is capable of monitoring and processing signaling and communication sessions with respect to said non-mobile device/telephone number.

As a result, the proposed access device enables versatile use of said mobile and non-mobile devices in the combined communications network, based on monitoring and processing of signaling and communication sessions in respect of both said non-mobile and said mobile telephone numbers.

In the preferred embodiment of the access device, it is adapted to support rerouting of a communication session, when in progress via said non-mobile device of the non-mobile network, to said mobile device of the mobile network and/or vice versa.

Usually, the mobile number and the non-mobile number are assigned to one user or a number of associated users.

The access device preferably comprises a DSLAM (Digital Signal Line Access Multiplexer) routinely serving said non-mobile network by supporting protocol(s) of the non-mobile network. In addition the access device (DSLAM) comprises the functional block (one or more cards) constituting a hardware/software means and a memory means enabling the access device to perform the above-mentioned new capabilities and functionalities. It should be noted that in a particular embodiment, the access device may constitute a DSLAM in combination with a modified Customer Premises Device (CPE) serving a specific local network as part of the access network; in this case the hardware/software means can be distributed between the CPE and the DSLAM. For example, the protocol transforming block can be located at the CPE.

As has been mentioned, the access device can alternatively be in the form of an enhanced OLT (Optical Line Termination).

According to yet a further aspect of the invention, there is provided a system operative to support a communication session in a combined network, the system comprising

at least one access device as described above,

at least one non-mobile communications network connected to said access device and comprising at least one non-mobile communications device, and

at least one mobile communications network associated with at least one mobile communication device and having a controller of the mobile network connected to said access device (preferably by wireline means) and operative to establish digital communication with said access device.

As will be appreciated by those skilled in the art, the non-mobile networks may implement connections to the subscribers, inside home networks, by applying one or more various technologies that are currently in use for access networks. Examples of such technologies are POTS (in which case the digital signal received at the edge node device is converted into an analogue POTS signal , and shall be forwarded to the non-mobile device as such), ATM (where the signal may be forwarded to the non-mobile device as a VoATM signal), DSL (where the signal may be forwarded to the non-mobile device as a VoDSL signal), IP (where the signal may be forwarded to the non-mobile device as a VoIP signal), Bluetooth, UWB, Wimax, Wi-Fi (where the signal may be forwarded wireless to the non-mobile wireless phone), and the like.

The non-mobile network may comprise a number of fixed communication devices, one or more cordless communication devices, some of them connected in parallel (for example, a simple desk telephone and a cordless telephone in parallel). In the present specification, the non-

mobile network may comprise at least one Local Area Network (LAN) serving an office, a house, an apartment or the like; it can also be a wireless LAN having a CPE connected to the edge node by wireline means.

The controller of the mobile network may, for example, be RNC (Radio Network Controller), a BSS (Base Stations Server) or a unit performing similar controlling and coordinating functions in the mobile (cellular) network. For example, these functions may include obtaining information from base stations of the mobile network about location of the registered mobile devices, and deciding which of the base stations supports a specific communication session with a specific device.

Owing to the new functionality of the access device, in particular its "quasi-base station functionality", the non-mobile network actually becomes part of the mobile (cellular) network.

It can be demonstrated by all the above-mentioned examples, and the scenarios presented in the detailed description. In particular, when the communication session in progress is held on a mobile device and then rerouted to be held through a non-mobile communication device, the session at the main portion of its communication path continues to be transmitted via and supported by the mobile (cellular) network, as it was made before switching to the non-mobile device, though it is now supported by a "quasi base station" (the access device) at the termination section of the communication path which becomes a section of the non-mobile network instead of a section of the mobile network.

Though the user continues using the mobile (cellular) service when switching to a non-mobile network phone, it can be cost effective to both the service providers and the users, due to providing/enjoying the new useful feature.

Brief description of the drawings

The invention will be further described with reference to the following non-limiting drawings, in which:

Fig. 1 is a pictorial representation of one particular example of a communications system implementing the proposed technology and comprising an exemplary access device according to the invention.

Figs. 2, 3, 4 illustrate three different scenarios assisting to understand the method according to the invention.

Detailed description of the preferred embodiments

Fig. 1 illustrates a pictorial diagram of a combined communications networks system. The system comprises a local access network 10 which contains a first private non-mobile network 12 (say, a home network) comprising a cordless phone 14 and a computer 16. Communication sessions to and from the private non-mobile network 12 pass through a CPE (Customer Premises Equipment) 15 located in the house. The access network 10 also includes a second non-mobile home network 18 comprising one or more wireless communication devices, such as a computer 20 communicating via a wireless link to a computerized device 22 serving as a Wireless Fidelity (Wi-Fi) access point of a wireless local loop system. Both the CPE 15 and the access point 22 are connected in a wireline manner (say, via DSL cables/fibers 21 and 23) to a DSLAM 24. Both the connections 21 and 23 allow bi-directional transmission of signaling and communications sessions between the access networks 12, 18 and the access device 24 (see an arrow marked S,C.) The DSLAM 24 is an access device and supports protocols of the non-mobile home networks 12 and 18; being an edge node between different types of networks, it is designed to support at least a protocol of a mobile

communications network 40. Moreover, the DSLAM 24, connected by DSL cables to the private networks 12 and 18, is also connected to an RNC (Radio Network Controller) 42 of the mobile network; the DSLAM therefore forms a part of the cellular network 40. Fig. 1 shows that the connection between the DSLAM and the RNC is via a wireline link 43 (DSL lines, fiber, etc). The connection 43 ensures a bi-directional signaling and communications exchange (marked with an arrow marked S,C) between the access device 24 and the RNC 42. RNC is only one example of controlling means in a mobile (cellular) network which could be used to achieve the object of the present invention.

The DSLAM 24 may additionally be connected to other types of networks (say, a fixed network 26 comprising an ATM 28 and IP 30 sub-networks), and constitutes a border node between at least one other pair of the networks associated with it.

According to the invention, the DSLAM 24 (or DSLAM 24 in combination with CPE 15, or Optical Line Termination OLT) are some of possible embodiments of an access device serving an edge node, or an integrating node between a mobile (cellular) network 40 and a non-mobile access network 10. In this drawing, the access device is DSLAM 24, additionally provided with a functional block 25 supporting its novel functions and allowing it to simulate a base station of the cellular network 40. To this end, the block 25 comprises software and/or hardware means that enable DSLAM to performing functions similar to that of "Node B" of the mobile network: maintaining digital communication with RNC 42, determining proximity of a mobile device 44 (based on signaling with respect to the mobile device, for example received from a non-mobile device 16), and supporting the mobile communication session in its area (for example by rerouting the communication session from the mobile

device 44 to a non-mobile device 16 and vice versa). The mobile device 44 may be located quite far from the LAN, but the communication session can be rerouted if an appropriate signaling information is obtained by the access device 24. Such a signaling information can be applied to the access device by the user, for example to reroute future sessions to another communications device**. (OK?)** It is understood that when rerouting a communication session from one network to another, which operate using different protocols, the access device should be capable of transforming the communication protocols. Therefore, the functional block 25 also comprises the appropriate sub-unit.

This "quasi" Node B functionality of the access device comprises serving at least some pre-determined mobile (cellular) telephone numbers registered in the access device, and may include providing various services characteristic to cellular networks. The access device is also useful in serving such cellular devices/numbers which are registered in its memory as respectively associated with particular non-mobile devices/numbers of the non-mobile network (for example, the numbers belonging to one and the same user). Therefore, the functional block 25 also comprises a memory unit.

In a case of a common receiver serving both as a mobile device and as part of a non- mobile cordless device, the function of identifying and determining proximity of the mobile device can be performed automatically, via the base of the cordless device being in communication with the access device. In other cases, these functions are performed based on the signaling received at the access device from either a non-mobile device (directly), or the mobile device (via its closest base station and then via the controller of the mobile network – say, RNC 42) whenever the rerouting is requested. Service of the mobile devices is

therefore performed by the access device with the aid of the cellular controlling unit interconnected therewith.

The combined network system further comprises, for example, a fixed network 26 with a routing junction 27. The routing junction 27 performs navigation of data incoming the fixed network 26, either to an ATM –based portion 28 of the fixed network 26 (i.e., the network operating in the format of Asynchronous Transfer Mode), or to an IP portion 30 (the network utilizing Internet Protocol), and vice versa. The cellular network 40 (say, using Asynchronous Transfer Mode - ATM format) may be further connected with networks of other types.

However, the communication sessions which are considered in the frame of the present patent application are those established along a communication path via a number of different network sections, but including at least a portion in the cellular network 40, and associated with its mobile device 44 (having the mobile telephone number registered in access device 24 of the non-mobile network 10 with reference to the non-mobile device 16). For example, the communication path is established between a mobile device 45 and the mobile device 44. It should be kept in mind that it can be simulated by a non-mobile device 16. When rerouting the session according to the invention, the communication path may selectively comprise a) a mobile network section in the network 40 between a particular mobile device 44 and its closest base station 46 controlled by the RNC 42; b) a non-mobile network section in the access network 10 between the non-mobile device 16 and the access device 24 serving a base station of the controller RNC 42 , under control of the same RNC 42. **(OK?)**

Thereby, owing to the new functionality of the access device 24, and since RNC 42 is wireline connected and maintains digital communication

with the access device 24, the cellular section of the communication path can reversibly be replaced with the fixed section in the access network 10, if so desired.

Fig. 2 illustrates a first scenario, with a mobile device with a DECT functionality having a single mobile number. According to definitions used in the present application, it is the case when the mobile device and the non-mobile device is one and the same device having one and the same mobile telephone number.

The illustration shows a mobile network comprising an access device DSLAM/OLT which simulates a base station of the mobile network (due to that it is provided with a sign of the base station or node B). Since in this example we do not have non-mobile telephone numbers, the access network is presented only by the access device DSLAM/OLT.

Scenario 1.
A mobile device is connectable to the DSLAM/OLT (e.g., has also a DECT functionality). It has a single mobile number. The DSLAM/OLT is aware of the mobile number.

- When the user starts a mobile session and enters home, the DSLAM/OLT detects its presence and reports to the RNC that he can serve the call and the call reroutes to the DSLAM/OLT
- When the user starts a session from home, it is a mobile call (because the device has a mobile number). When the user leaves home the DSLAM/OLT reports to the RNC that he cannot serve the call and the call is supported from another node B.

Fig. 3 illustrates a second scenario; a mobile device MD and a non-mobile device NMD having one and the same mobile number act in the scenario. According to our definitions, the devices are separate, but the number is common.

The illustration also shows a mobile network comprising an access device DSLAM/OLT which simulates a base station of the mobile network. Since the non-mobile NMD device has the mobile number, both NMD and its customers premises equipment CPE are shown in the mobile network. Also in this example we do not illustrate a non-mobile access network, though it exists. **(OK?)**

Scenario 2:
A mobile device and a non-mobile device with the same mobile number. DSLAM/OLT is aware of the mobile number.

- When the user starts a session from the mobile device and enters home he can pick up the non-mobile device and press a button or insert a code. The DSLAM/OLT detects this event and reports to the RNC that he can serve the call and the call reroutes to the DSLAM/OLT
- When the user starts a session from the non-mobile device, it is a mobile call (because the device has a mobile number). When the user leaves home he should press a button or insert a code in the mobile device. The RNC will determine that the call should be rerouted to the node B (other than the DSLAM/OLT) that serves the mobile device.
- Probably it is impossible to start a new call from the mobile device while there is an active call from the non-mobile device or vice versa.

Fig. 4 illustrates yet another scenario where the mobile device MD and the non-mobile device NMD are separate and the telephone numbers are respectively different. Fig. 4 shows a mobile network with an appended portion of a non-mobile network (NM network); however, both the non-mobile NMD device and its CPE are shown in the cellular network, since the access device DSLAM/OLT simulates functions of node B, and the non-mobile device NMD consequently simulates the mobile device MD. **(OK?)**

Scenario 3:
A mobile device and a non-mobile device are separate devices. The mobile device has a mobile number, and the non-mobile device has a non-mobile number.

- The DSLAM/OLT should be aware of both numbers
- When the user starts a session from the mobile device and enters home he can pick up the non-mobile device and press a button or insert a code. The DSLAM/OLT detects this event and reports to the RNC that he can serve the mobile call (associated with the programmed mobile number) and the call reroutes to the DSLAM/OLT
- When the user starts a session from the non-mobile device, he has two choices
  - By default the call will be non-mobile and there will be no way to reroute it to a mobile device **(out of the scope of the invention; remember that the present invention considers only mobile communications sessions)**
  - If the user wishes to perform a mobile call (insert a code or push a button), then the call starts as a mobile call. When the user leaves home he should press a button or insert a code in the mobile device. The RNC will determine that the call should be rerouted to the node B that serves the mobile device.
  - The default should be that all outgoing calls are mobile and a special code would make the outgoing call be non-mobile.

It should be appreciated that other embodiments of the device and of the system as well as other versions of the method can be proposed, which are to be considered part of the invention if covered by the claims that follow.

Claims:

1. A method of supporting a mobile communication session in a combined communications network comprising a mobile network and a non-mobile access network; the method comprises appending the non-mobile access network to the mobile network in a manner enabling the access network to simulate a part of the mobile network with respect to at least one mobile telephone number; the method thereby allowing freely switching from a mobile communication device, associated to said mobile number and belonging to the mobile communication network, to a non-mobile communication device belonging to the non-mobile communication network and/or vice versa.

2. The method according to Claim 1, wherein in said mobile network, said mobile communication session is associated with a specific mobile number, the method comprises

associating, in the non-mobile access network, said specific mobile number with the non-mobile device of said non-mobile network,

selectively conducting said mobile communication session either through the mobile device associated with said mobile number in the mobile network, or through the non-mobile device associated with said mobile number in the non-mobile network.

3. The method according to Claim 1 or 2, wherein the mobile communication session is a communication session held through a communication path at least partially passing via the mobile network.

4. The method according to any one of the preceding claims, further comprising:

providing the non-mobile access network with an access device capable of simulating functions of a base station of the mobile network relative to a controller of said mobile network and with respect to at least said specific mobile number of said mobile network.

5. The method according to any one of the preceding claims, comprising registering the mobile number in the access device, for associating said mobile number with the non-mobile device of said non-mobile network.

6. The method according to any one of Claims 2 to 5, wherein said mobile telephone number is a single number to both said mobile device and said non-mobile device.

7. The method according to Claim 6, wherein said mobile device and said non-mobile device are one and the same device having a DECT-like functionality.

8. The method according to any one of claims 2 to 5, wherein the mobile device has the mobile number and the non-mobile device has a non-mobile number assigned in the access device. .

9. The method according to any one of claims 6, 7, 8, comprising a step of transferring said communication session in progress from the non-mobile device to the mobile device, and vice versa.

10. A method of supporting a mobile communication session in a combined network comprising a mobile network and a non-mobile

network, comprising re-routing, during said single communication session, from a mobile device associated with the mobile communications network to a non-mobile device associated with the non-mobile communications network, or vice versa.

11. The method according to Claims 9 or 10, wherein the step of rerouting is preceded by obtaining a suggestion to reroute the communication session.

12. The method according to any one of Claims 9 to 11, comprising a step of determining proximity of the mobile device to the non-mobile device.

13. The method according to Claim 11 or 12, wherein the suggestion of rerouting is applied from the device presently not engaged with the communication session.

14. The method according to any one of Claims 11 to 13, wherein the step of obtaining the suggestion of rerouting is performed either automatically or non-automatically.

15. The method according to any one of claims 11 to 14, wherein the step of rerouting is preceded by obtaining approval for the rerouting.

16. An access device of a non-mobile access network for serving in a combined communications network comprising said non-mobile network

and a mobile network, the access device is capable of simulating functions of a base station of the mobile network for at least one specified mobile number of said mobile network, by presenting an alternative to conduct a mobile communications session, associated in said mobile network with said specified mobile number, through a non-mobile device of the non-mobile network.

17. The access device according to Claim 16, wherein the mobile telephone number belonging to said mobile network is registered in said access device in association with a non-mobile communications device belonging to said non-mobile network.

18. The access device according to claim 17, allowing said mobile communication session, being initially conducted through one of said non-mobile device or a mobile device associated with said registered mobile number, to be continued by selectively using another of said mobile device or said non-mobile device.

19. The access device according to any one of claims 16 to 18, being connectable with said non-mobile access network and with a controller of said mobile network to enable digital communication,

capable of transforming communication protocols from at least one protocol of said mobile network to at least one protocol of said non-mobile network, and vice versa,

provided with a functional unit performing functions similar to that of a base station of said mobile network, including:

registering at the access device at least one mobile telephone number assigned to a mobile device in said mobile network,

monitoring and processing signaling sessions and communications sessions associated with said mobile telephone number.

20. The access device according to Claim 19, enabling registration of said mobile telephone number with association to at least one non-mobile telephone number assigned in said non-mobile network with the non-mobile device.

21. The access device according to any one of Claims 16 to 20, capable of determining proximity of the mobile device associated with said registered mobile telephone number.

22. The access device according to Claim 19, capable of monitoring and processing signaling and communication sessions with respect to said non-mobile device/telephone number, thereby enabling versatile use of said mobile and non-mobile devices in the combined communications network, based on monitoring and processing of signaling and communication sessions in respect of both said non-mobile and said mobile telephone numbers.

23. The access device according to any one of claims 16 to 22, adapted to support rerouting of the communication session, when in progress via a non-mobile device of the non-mobile network, to a mobile device of the mobile network and/or vice versa.

24. The access device according to any one of claims 16 to 23, comprising a DSLAM (Digital Signal Line Access Multiplexer),

comprising a hardware/software means supporting a node B functionality, a memory means and a communications protocol transforming block.

25. A system operative to support a communication session in a combined network, the system comprising

at least one access device according to any one of claims 16 to 24,

at least one non-mobile communications network connected to said access device and comprising at least one non-mobile communications device, and

at least one mobile communications network associated with at least one mobile communication device and having a controller of the mobile network connected to said access device and operative to establish digital communication with said access device.

26. The system according to Claim 25, wherein said controller of the mobile network is RNC (Radio Network Controller).